

Date: Fri, 12 Feb 93 04:30:36 PST
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #200
To: Info-Hams

Info-Hams Digest Fri, 12 Feb 93 Volume 93 : Issue 200

Today's Topics:

 920 MHz oscillators
 Can scanners pick up CORDLESS phones ??
 Cellular Safety
 Daily IPS Report - 11 Feb 93
 DJ580 Mods
 Ham Radio Causes Cancer!
 HF Propagation Beacons
 HTX-100 Mailing List
 Is used ham gear overpriced?
 JPS NIR-10 DSP Unit - Opinions sought
 Kwd 530/830 on DC power?
 Motorola SecureClear(tm) Cordless Phones
 new dry-cell technologies (was "battery" and "Lithium AA cells")
 RF and Power Supply
VEC's holding your license application (was Re: Beware the Jabbawock and VEC)

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 11 Feb 93 21:50:57 GMT
From: ogicse!uwm.edu!caen!sdd.hp.com!hpscit.sc.hp.com!rkarlqu@network.UCSD.EDU
Subject: 920 MHz oscillators
To: info-hams@ucsd.edu

Gary Coffman (gary@ke4zv.uucp) wrote:

: In article <C25CsE.pt@cs.uiuc.edu> u2203@cs.uiuc.edu (Nicolas Dade) writes:
: >How are 920 or so MHz oscillators built? That is, do they start with a

: >lower frequency signal and multiply it, or have a very large resonant
: >cavity?
: >
: >Perhaps I should ask how the oscillator in cellular phones is built,
: >since they aren't too far from 920MHz in frequency.
:
: There are two main methods. One is to use an 80-100 MHz crystal and
: multiply it 9-10 times by a couple of stages of multipliers and then
: stripline filter the result. The other method uses a voltage variable
: oscillator at 900 MHz with a divider and PLL generating an error voltage
: to keep it locked to a low frequency reference. Repeaters and other
: commercial systems use the former method while frequency agile systems
: like cellular phone use the latter.
:
: Gary

On the other hand, what is actually in cellular phones is a coaxial
dielectric resonator stabilized VCO, which is divided down and phase
locked. They are real nice oscillators with low microphonics that
cost only \$20, which is a good deal for what you get.

The cellular base stations I have seen use crystal oscillators
(around 14 MHz. for Motorola) that are multiplied up. The crystal
oscillators won't work for the phones, because frequency agility
is required. The phase locked VCO is unacceptable for the transmitter
due to spurs and noise.

Rick N6RK
rkarlqu@scd.hp.com

Date: Wed, 10 Feb 1993 18:21:26 GMT
From: bcstec!rfweber@uunet.uu.net
Subject: Can scanners pick up CORDLESS phones ??
To: info-hams@ucsd.edu

315nikorawal@gw.wmich.edu writes:

> I would like to know on what frequencies do cordless phones
>operate ??? Can a scanner pick up these frequencies ?

Tuning the base freqs allows you to hear both sides of the conversations
and seems to have greater range (couple a 100 yards). The exact freqs.
are: 46.61, 46.63, 46.67, 46.71, 46.73, 46.77, 46.83, 46.87, 46.93, 46.97
Mhz.
-Bob

Date: 10 Feb 93 16:08:00 GMT
From: uswnvg!nv10.uswnvg.com!jbarcom@uunet.uu.net
Subject: Cellular Safety
To: info-hams@ucsd.edu

Here is some information recently released by the Cellular Telephone Industry Association (CTIA):

"SAR for Common Portable Communications Equipment":

Cellular Portable	.45 W/kg
Portable CB Radio	1.50 W/kg
Police Radio	3.60 W/kg

National Council on Radiation Protection and Measurements:
Maximum SAR for Localized Occupational Exposure:
8 W/kg for 6 minutes or more.

There are a number of research studies, papers and articles on health effects of EMF. Here are a few places to look:

American Medical Association Archives of Industrial Health
Annals of The New York Academy of Sciences
Bioelectromagnetics
Health Physics
International Journal of Radiation Biology
Journal of Microwave Power
Journal of Occupational Medicine
Radiation Research
Radio Science
Science
Transactions of American Institute of Electrical Engineers

Thanks,
John

Date: 11 Feb 93 02:10:50 GMT
From: eram!dave@midway.uchicago.edu
Subject: Daily IPS Report - 11 Feb 93
To: info-hams@ucsd.edu

IPS RADIO AND SPACE SERVICES AUSTRALIA
Daily Solar And Geophysical Report
Issued at 2330 UT 10 February 1993

Summary for 10 February and Forecast up to 13 February
No IPS warning is current.

1A. SOLAR SUMMARY

Activity: moderate

Flares	Max	Fadeout	Begin	End	Freq.	Sectors
M1/2B	0741UT	none				
M1/1N	0839UT	none				
M2/2B	2007UT	possible			lower	East Pacific/ North American

Observed 10.7 cm flux/Equivalent Sunspot Number : 180/134

1B. SOLAR FORECAST

	11 February	12 February	13 February
Activity	Moderate	Moderate	Moderate
Fadeouts	Possible	Possible	Possible

Forecast 10.7 cm flux/Equivalent Sunspot Number : 175/129

1C. SOLAR COMMENT

None.

2A. MAGNETIC SUMMARY

Geomagnetic field at Learmonth : quiet to unsettled, apart from active levels 12-15 and 18-21UT.

Estimated Indices :	A	K	Observed A Index 9 February
Learmonth	14	3222 4342	
Fredericksburg	11		20
Planetary	15		19

2B. MAGNETIC FORECAST

Geomagnetic field at Learmonth : mostly quiet to unsettled, with isolated active periods.

Ap : 15

2C. MAGNETIC COMMENT

None.

3A. GLOBAL HF PROPAGATION SUMMARY

Propagation conditions :

Low Lats: good.

Mid Lats: good.

High Lats: poor to fair.

PCA Event : None.

3B. GLOBAL HF PROPAGATION FORECAST

Propagation conditions are expected to be good at low and mid lats,
and poor to fair at high lats.

3C. GLOBAL HF PROPAGATION COMMENT

None.

4A. AUSTRALIAN REGION IONOSPHERIC SUMMARY

MUFs at Sydney were near February predicted values

Observed Sydney Regional Ionospheric Index : 54

4B. AUSTRALIAN REGION IONOSPHERIC FORECAST

	11 February	12 February	13 February
MUFs	near normal	near normal	near normal
T index	70	65	65

Predicted Monthly Ionospheric Index for February is 60.

4C. AUSTRALIAN REGION COMMENT

Sporadic E layer was observed intermittently yesterday, and is again
expected at times today.

--

Dave Horsfall (VK2KFU)

dave@esi.COM.AU

VK2KFU @ VK2RWI.NSW.AUS.OC

...munari!esi.COM.AU!dave

Date: Thu, 11 Feb 1993 03:58:02 GMT

From: usc!howland.reston.ans.net!bogus.sura.net!udel!gatech!ncar!csn!csn!

teal.csn.org!erik@network.UCSD.EDU

Subject: DJ580 Mods

To: info-hams@ucsd.edu

I am considering (strongly) getting an Alinco DJ580. I am familiar with the
mods (snip red & blue wires at bottom of radio) but am curious as to
whether this opens just extended receive or also transmit. Is any
kind of transmit extended with this mod?

This brings up another question. If I am licensed to use a business band
radio for my job and I have an amateur radio modified to transmit out
of band, is it leagle for me to use the amateur radio on the business
frequency since I am licensed there?

TNX for the help with both questions.
73 de N5YXX, erik erik@csn.org

--

SNAIL MAIL: Erik Mugele * INTERNET: erik@csn.org * "What some people mistake
829 Hathaway Dr #203C * AT&Tnet: 719.550.6188 * for the high cost of
Colorado Springs, CO 80915 * HAMnet: N5YXX * living is really the cost
U.S.A. * * of living high." -Dr. Bob

Date: 11 Feb 93 09:34:04 GMT
From: news-mail-gateway@ucsd.edu
Subject: Ham Radio Causes Cancer!
To: info-hams@ucsd.edu

Just to add to the debate here in Ireland they want to build a Loran-C transmitter on the west coast as part of a general upgrade to the European navigation network. Output power will be 750 kW (yes, kilowatts) and the transmitting mast will be located in a fairly isolated spot. I haven't a clue what the frequency is unfortunately.

Not surprisingly, the locals are a bit upset at being so close to such a powerful transmitter. The same sort of fuss was kicked up when a 253 kHz 1000kW AM transmitter was built a few years ago in another part of the country.

Anyway, I'm curious: The builders of these transmitters maintain that they are safe and I would probably agree with them but presumably there's a minimum distance between a person and the transmitter inside which one should not spend too much time. Is there any way of calculating the nearest you can get to one of these transmitters without suffering injury or other side-effects over any period of time?

Cheers,
Simon Woodworth.

=====
Simon Woodworth. | woods@glas.rtsg.mot.com
Motorola (Ireland) Ltd., | Don't blame my employers
Cork, Ireland. | for anything I say! :-)

"No matter where you go, there you are!"
- USS Excelsior bridge dedication plaque.
=====

Date: 10 Feb 93 13:53:40 GMT
From: auratek!epacyna@uunet.uu.net
Subject: HF Propagation Beacons
To: info-hams@ucsd.edu

There are Beacons at 14.100MHz. It is a network of sites around the world and cycles once each 10 minutes. Some of the sites are W2 (NYC), W6 (SF), KH6, JA, LA, ZS, CT,LU? etc.. During the 10 minute cycle (which repeats 24 hours a day), each station comes on and ID's at 100W. Then the station keeps reducing power by a factor of 10 (e.g. 100, 10, 1, .1W), returns to 100 W and signs off. So in a short period, you will know where there is propagation and how good it is. Each power level is identified by a specific # of dots preceeding a 10second carrier.

For more details, there was a write up in QST about 2 years ago.

Ed W1AAZ

Date: 10 Feb 93 20:42:49 GMT
From: era!mark@uunet.uu.net
Subject: HTX-100 Mailing List
To: info-hams@ucsd.edu

With all of this talk about HTX-100s and owning one myself, is there any interest in starting a mailing list? (If you're interested, drop a line. If I get more than ten replies I'll start a list.)

73.

- Mark

.....
: Mark A. Feit KD4TAJ : Internet: mark@era.com :
: Engineering Research Associates : USENET: ...!uunet!era!mark :
.....
 "Keep BSD Free -- Boycott AT&T"

Date: 11 Feb 93 00:26:17 GMT
From: sun-barr!cs.utexas.edu!usc!hela.iti.org!cs.widener.edu!dsinc!
netnews.upenn.edu!mipg.upenn.edu!yee@ames.arpa
Subject: Is used ham gear overpriced?
To: info-hams@ucsd.edu

I am currently in the market for an HT and have been shopping around

both the new and used equipment. I notice that the going price for used gear is on the order of 80% (or so) of the new price. While I agree that this should be the price if this is all the market can bear, I question whether it is a bit overpriced. The risk in purchasing used gear is a bit higher than new.

First of all, when buying used gear, you do not get much in the way of a warranty (most warranties are to the original owner and for a limited time only) and there is no guarantee that the equipment you buy is anything other than a doorstop. Secondly, there is much less protection against fraud; in private sales, it is pretty much "let the buyer beware". Also since the used gear is frequently discontinued, the level of support from the manufacturer is inevitably lower. Finally, in some cases, you don't get all the accessories and manuals that came with the unit and must be purchased separately.

After shopping around, I have pretty much resigned myself to having to buy my HT new. I would prefer a discontinued ICOM 32AT but the going rate is too high for my tastes. The difference between the used 32AT and a new rig isn't all that much.

I am not sure about the market for used HF gear but since there is much more of it out there, I suspect that it is more reasonable. I purchased my used Yaesu 101B for a couple hundred dollars where the price of a modern rig is well over \$1k.

Comments anyone?

--
411 Blockley Hall | Conway Yee, N2JWQ
418 Service Drive | yee@ming.mipg.upenn.edu (preferred)
Philadelphia, PA 19104 | cy5@cunixa.cc.columbia.edu (forwarded to above)
(215) 662-6780 |

Date: 11 Feb 1993 05:45:57 GMT
From: mvb.saic.com!unogate!news.service.uci.edu!usc!howland.reston.ans.net!
bogus.sura.net!darwin.sura.net!mojo.eng.umd.edu!tedwards@network.UCSD.EDU
Subject: JPS NIR-10 DSP Unit - Opinions sought
To: info-hams@ucsd.edu

In article <117gvl\$e9i@bigboote.WPI.EDU> gkd@wpi.WPI.EDU (Gregory K Doerschler) writes:

>I have read some good reviews of the JPS NIR-10 DSP Unit, and have
>been thinking about using one with my ICOM R71A HF receiver to try
>to alleviate electrical buzzing, impulse & computer noise when
>listening to SSB and shortwave broadcast transmissions.

You might want to work on better shielding first...and also I recommend you look into the W9RG DSP filter kit unless you are very circuit phobic, because it is much cheaper, and has an LMS auto-notch/noise-canceller .

-Thomas N3HAU

Date: 12 Feb 93 06:30:43 GMT
From: news.service.uci.edu!ucivax!gateway@network.UCSD.EDU
Subject: Kwd 530/830 on DC power?
To: info-hams@ucsd.edu

Just curious, anyone out there use an old Kenwood TS 520 DC module to power the 530 or 830? I was just thinking on it, and am about to get out the service manuals and see if the DC module will provide the proper high voltage, and if the transformer taps look to be the same.

Clark

.....
Clark Savage Turner, Graduate Student Researcher
Safety Critical Software Group home:
Department of Info. and Computer Science 1514 Verano Place
Irvine, CA. 92717 Irvine, CA. 92715
(714) 856 4049 (714) 856 2131

WA3JPG, QRP #3526, active on HF, VHF and UHF.
Admitted to practice law in California, Massachusetts, and New York.
ARRL Volunteer Counsel

Date: 11 Feb 93 22:05:33 GMT
From: ogicse!uwm.edu!cs.utexas.edu!oakhill!hunter@network.UCSD.EDU
Subject: Motorola SecureClear(tm) Cordless Phones
To: info-hams@ucsd.edu

Hi guys:

I have just purchased a Motorola SecureClear cordless phone with the belief that it will "scramble" the audio between the handset and base unit. Someone else has told me that the technique used is "audio inversion" and that, far from being secure, it is relatively easy and cheap to defeat. Could someone tell me exactly what "audio inversion" is and how

it would be descrambled? Is this no better than you garden variety Cobra phone? Thanks.

— —

Hunter Scales Motorola Semiconductor Inc.
hunter@prometheus.sps.mot.com Austin, Texas
"The opinions expressed in this posting do no necessarily reflect
those of the management"

Date: 12 Feb 93 01:13:43 GMT
From: ogicse!uwm.edu!spool.mu.edu!sgiblab!pacbell.com!ptsfa!
dmturme@network.UCSD.EDU
Subject: new dry-cell technologies (was "battery" and "Lithium AA cells")
To: info-hams@ucsd.edu

In article <1993Feb10.025129.23939@pixar.com> Bruce@Pixar.com (Bruce Perens) writes:

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>"Battery" is a misnomer - what we are talking about are dry-cells. They
>are only a "battery" when more than one cell are connected together.
>These are technical terms, so the common usage does not determine what
>is correct.
>
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Sounds like me talking.... :-)

The Technically speaking column in the February 1993 issue of the IEEE Spectrum has an item on The cell/battery conundrum.

The item was prompted by a reader comment on an earlier Spectrum article which seemingly confused "cell" and "battery."

This prompted the column coordinator to do a little research.

He found that the IEEE Standard Dictionary of Electrical and Electronics Terms states that a battery is "two or more cells ..." but common usage permits the designation to be applied to a single cell.

Furthermore, the Oxford English Dictionary states that one of the earliest references to an electric battery was made by Sir Humphrey Davy in 1801 who wrote: "The third and most powerful class of Galvanic batteries ... is formed, when metallic substances, oxable in acids ... are connected, as plates with oxidating fluids."

The Oxford dictionary's definition of battery includes one cell or more.

The meaning of battery is traced even earlier to a source in fabric dyeing where battery is used to describe a single cell.

I guess I'll have to stop correcting people who talk about a D battery!

--

Dave Turner (510) 823-2001 {att,bellcore,sun,ames,decwrl}!pacbell!dmtur

Date: 11 Feb 93 21:45:47 GMT

From: ogicse!emory!gatech!darwin.sura.net!mojo.eng.umd.edu!chuck@network.UCSD.EDU

Subject: RF and Power Supply

To: info-hams@ucsd.edu

In article <1993Feb10.195322.5152@news.ysu.edu> ag821@yfn.ysu.edu (Jeff Gold) writes:

>

>

>Help?

>

>I just put up a 160 meter 1/2 wave length dipole. It is
>only up in the air about 28 feet. It is resonant at 1.82
>or thereabouts. I don't have everything soldered up yet. The
>SWR is about 1.6:1 and under 2:1 for about 45Khz. I have it
>going into a AEA antenna tuner. When I turn the power past
>40 watts, the circuit breaker in my power supply trips.

Try the same thing into a dummy load. If your breaker still trips (I bet it will), the problem is not caused by stray RF.

Solid state transistor power amplifiers (you didn't say what kind of radio you have) are broadbanded, and as a result, are a compromise at the highest and lowest frequencies they handle. There usually isn't enough ferrite in the input and output matching transformers to do a really good job of handling the 160m band. This causes the amplifier to be inefficient at the 160m band, and consequently it draws much more DC power there, than it would at say 20m. You probably need a larger breaker, or higher powersupply voltage, or to realign your transmitter (or, get used to only 40w).

73,

Chuck Harris - WA3UQV
chuck@eng.umd.edu

Date: Wed, 10 Feb 1993 23:30:19 GMT

From: pacbell.com!well!moon!pixar!news@network.UCSD.EDU
Subject: VECs holding your license application (was Re: Beware the Jabbawock and VEC)
To: info-hams@ucsd.edu

I upgraded to Technician + HF privileges (5 wpm code test) before the FCC processed my Technician license. At that time, the ARRL VEC was very careful to give me a letter explaining that they would hold my application until I sent them a copy of my Technician license. The ARRL VE then carefully explained this to me, and made sure I understood. Then, the VE supervisor explained it all again while doing the final check on my application. It's clear that ARRL doesn't expect you to know this.

I found the ARRL VEs were a bit confused that day about coordinating their work flow, but they were very careful to make sure my application wouldn't drop through cracks in the floor.

Bruce, KD60TD

Date: 11 Feb 1993 05:38:26 GMT
From: mvb.saic.com!unogate!news.service.uci.edu!usc!cs.utexas.edu!swrinde!gatech!darwin.sura.net!mojo.eng.umd.edu!tedwards@network.UCSD.EDU
To: info-hams@ucsd.edu

References <C1xwDM.EJE@icon.rose.hp.com>, <1ktr9l\$4f9@slab.mtholyoke.edu>, <1993Feb06.000013.22263@watson.ibm.com>r
Subject : Re: Grace DSP-12 vs. AEA DSP-1232 ? Opinions?

In article <1993Feb06.000013.22263@watson.ibm.com> uri@watson.ibm.com writes:

> Could you please compare these two DSP units?
> Advantages and disadvantages of each?

Well, I can only talk about the DSP-1232 from AEA. We've had one at W3EAX (UM ARA) for about a month or so now. It's been fun, but not perfect.

The operating mode of the modem is very bizarre. There are PACKET, ASCII, RTTY, etc. modes. Once you are in a particular "mode" you have to choose one of the many modems (I don't remember exactly...something like 20-30). Not all modems work in all modes. This is a little strange. I understand the concept, but it would seem to have been more natural to have a hierarchy of modems, or only displaying a list of modems available for a particular mode. The manual is split into packet, ascii, rtty, cw, and then

satellite modems (including both ascii and packet ones...)

OK, well, how does it perform? Great, as far as we can tell. We've done 1200 and 2400 bps terrestrial contacts, 1200 bps PACSAT contacts (yey! we're on A0-16 in a big way now!), and have been reading 400 bps ASCII off of A0-13 (not too clear, but we do need a good mast-mounted pre-amp).

I don't have any real problems with the rig except I don't easily see how it can be expanded or programmed by a user. It also does NOT have Doppler shift steps working with the PACSAT modem (gack!), even though there are ports to attach to on the back, so theoretically this will be coming. I would really want this now, but that's life.

One not-publicized feature of the DSP-1232 is a special master/slave meteor scatter packet mode...hopefully we will be testing this soon once we find other stations to work with (currently talking with three people about doing it, arranging schedules is the tough part).

We have not yet hooked it up to HF...so no serious RTTY or CW or TDM RTTY (should be interesting!) yet.

I'm really glad we got it. I don't know if it is better than the DSP-12, but certainly there are plenty of people with DSP-1232 and 2322's out there, and we did choose AEA with a concern that they might be a little better placed in the market. Time will tell, of course.

-Thomas N3HAU

End of Info-Hams Digest V93 #200
